

Claim 87: The isolated polypeptide of claim 74, consisting of an amino acid sequence found in the amino acid sequence encoded by the nucleotide sequence set forth in SEQ ID NO: 1.

The amendment is presented in a sincere attempt to place this application in condition for allowance or to reduce the issues on appeal. A showing of changes accompanies the amendment, and the amendments are discussed infra.

With respect to point 4, applicants submitted the '603 patent for several reasons. One of these is to show that tumor rejection antigen precursors are processed into MHC-Class II binding peptides. The examiner allowed this patent to issue, and the claims do not recited the formula of the MHC-Class II binding peptide. Written description of the binding peptide was not an issue. The '603 patent shows that the USPTO accepts the general proposition that ESO-1 is processed to Class II binders. This principle is operative here, and it is asked that the PTO follow precedent.

The examiner has rejected claim 85, arguing that there is no support for claims that encompass the peptide of SEQ ID NO: 7, plus one of the peptides of claim 74.

“(O)ne may combine both types of peptide, such as in immune compositions, thereby generating a combined immune response. Hence, all applications described can be used with just the Class I restricted peptides, with just the Class II restricted peptides, or with combinations of these.”

LUB 5466.4 CIP - JEL/NDH

Also, please refer to originally filed claims 55-60, which constitute original disclosure. Hence, the subject matter of claim 85 can hardly be deemed to constitute new matter.

Finally, with respect to the rejection of claim 87, the claim has been amended to refer to a polypeptide which has an amino acid sequence that is found in the protein encoded by SEQ ID NO: 1. This should address the issue

All issues have been addressed. Allowance of this application is believed proper and is urged.

Respectfully submitted,

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Alleles

Alleles	Serological specificity	Cells sequenced	EG	Ethnic origin of sequenced cells	Accession number	Ref.
DRB1*0101	DR1	LG2	Unk	Unknown	M11161	1
		45.1	Unk	Unknown	X03069	2
		JSA	Cau	Mexico, North America	AF029288	3
		DRH	Cau	Mexico, North America	AF029288	3
		CHG	Cau	Mexico, North America	AF029288	3
DRB1*01021	DR1	NASC	Unk	Unknown	-	3
		1568	Blk	African American, North America	M21008	4
		MUM	Cau	Mexico, North America	AF029293	3
DRB1*01022	DR1	TO0973	Cau	Unknown	Z50871	4
DRB1*0103	DR103	TER-ND	Cau	Ireland, Europe	-	4
		BON	Cau	France, Europe	M33600	7
		BG	Unk	Unknown	-	4
DRB1*0104	DR1	LAUTH1	Cau	Unknown	X70261	5
		LAUTH1	Cau	Unknown	X99896	5
DRB1*0105	1	JC10218	Ori	Japan, Asia	AB015184	6
DRB1*0106	1	MGM14106	Cau	Spain, Europe	AJ089723	6

Population distribution

Major ethnic group	Average frequency (%)	Range of frequency (%)
Black	5.46	0.00-9.20
Caucasoid	9.42	4.50-26.20
Oriental	2.98	0.00-16.10
Amerindian	1.50	0.70-2.30
Australasian Aborigines	NA	NA

Peptide-binding specificity

Allotype/ serotype	Peptide sequence	Source protein	Refs
DRB1*0101			
Motif	Relative position		
	121456789		
	Y I A L		10-13
	F M G A		
	W A S I		
	L I T V		
	I V C N		
	M N P F		
	V Y		
	A M		
	W		
Endogenous peptides	STPEFTILNFFHIPSFII LDHKFDLMYAKRAEFVHWY YKHTLNGYDSVKWRRPT ITFTLNGQDLQWERRP LPKPEKPVSKMRAITPLMQALENG	Apolipoprotein B 2646-2663 Tubulin α 1 chain 391-408 Bovine fetuin 56-74 Bovine fetuin 56-73 Invariant chain 81-105	12 13 14 14 15

3.32

335

Alleles	Serological specificity	Cells sequenced	EG	Ethnic origin of sequenced cells	Accession number	Refs
DRB1*0417	DR4	TOB-0070	Ami	Toba, Argentina, South America	L14481	23
DRB1*0418	?	A17	Cau	India, Asia	X71610	24
		A18	Cau	India, Asia	X71610	24
		74DR	Unk	Unknown	U38974	
DRB1*0419	DR4	FK	Cau	Unknown	L21985	25
DRB1*0420	DR4	AD-7863	Csu	England, Europe	L27217	26
		BM29/92	Unk	Unknown	L27217	26
DRB1*0421	DR4	SMH	Cau	Unknown	X80288	27
DRB1*0422	DR4	D18002	Cau	Unknown	U17014	28
DRB1*0423	DR4	MAG	Cau	Unknown	Z68508	29
DRB1*0424	DR4	Mi	Cau	France, Europe	Z71541	30
DRB1*0425	DR4	RJ	Blk	Aruba, West Indies	Y09211	
		HB	Blk	Aruba, West Indies	Y09211	
DRB1*0426	DR4	T010148	Cau	Unknown	AJ001252	31
DRB1*0427	?	NOR03	Unk	Unknown	AF030439	
DRB1*0428	DR4	JC4772	Ori	Japan, Asia	AB007635	
DRB1*0429	DR4	JC7616	Ori	Japan, Asia	AB007636	
DRB1*0430	?	JC9227	Ori	Japan, Asia	AB015185	
DRB1*0431	?	GE47192	Unk	Unknown	AJ009755	
DRB1*0432	?	NTE	Cau	Unknown	Y17273	

Population distribution

Major ethnic group	Average frequency (%)	Range of frequency (%)
Black	10.51	1.90-43.50
Caucasoid	12.82	5.20-24.80
Oriental	12.99	4.10-22.80
Amerindian	40.00	38.30-41.70
Australasian Aborigines	NA	NA

Peptide-binding specificity

Allotype/ serotype	Peptide sequence	Source protein	Refs
DRB1*0401			
Motif	Relative position 123456789		
	F N		32
	L Q		
	V S		
	T		
Endogenous peptides	VDDTQFVRFDSDAASQRNEPRAP VDDTQFVRFDSDAASQRNEPR VDDTQFVRFDSDAASQRMEP VDDTQFVRFDSDAASQRME VDDTQFVRFDSDAASQR DTQFVRFDSDAASQRMEFR TQFVRFDSDAASQRMEFRA	HLA-A2 28-50 HLA-A2 28-48 HLA-A2 28-47 HLA-A2 28-46 HLA-A2 28-44 HLA-A2 30-48 HLA-A2 31-49	33 32 32 32 32 33 32

DRB4 - DR53

Alleles

Alleles	Serological specificity	Cells sequenced	EG	Ethnic origin of sequenced cells	Accession number	Refs
DRB4*01	DR53	LBF	Cau	England, Europe	M17385,	1
		LKT3	Ori	Japan, Asia	M17388	2
		FS	Unk	Unknown	M15071	2
		BURKHARDT	Unk	Unknown	-	2
		PRIESS	Cau	Denmark, Europe	K02775	4
		DM24	Unk	Unknown	-	5
		DM29	Unk	Unknown	-	5
		MMCC	Unk	Unknown	-	6
		MOU	Cau	Denmark, Europe	M16942	7
DRB4*01011	DR53					
DRB4*0101102N: Name abandoned						
DRB4*0102	?	C.M.L.	Cau	Belgium, Europe	L08621	8
		C.M.L.	Cau	Belgium, Europe	D89879	9
DRB4*0103101	DR53	BOLETH	Cau	Sweden, Europe	M20555	10
		MJ4	Unk	Unknown	M15178,	11
					M15179	
		DKB	Cau	Netherlands, Europe	M17385,	1
DRB4*0103102N	Null	HSF7	Unk	Unknown	M17388,	
		DBB	Cau	Amish,	Z84477	12
				North America		
		DBB	Cau	Amish,	D89918	4
DRB4*01032	DR53	W778R	Cau	Unknown	AF048707	
		69-218	Cau	Unknown	X92712	13
DRB4*0104	?	76-394	Cau	Unknown	X92713	14
DRB4*0105	DR53	17345	Cau	Unknown	Y09313	14
DRB4*0201N	Null	GN016	Cau	Germany, Europe	U50061,	11
					U70543,	
					U70544	
DRB4*0301N	Null	GN017	Cau	England, Europe	U70542	15

Population distribution

Not available.

Peptide-binding specificity

Allotype/ serotype	Peptide sequence	Source protein	Refs
DRB4*0101			
	Motif not characterized		
Endogenous peptide	NNAXYAI5MARKIGA	L-plastin 581-595	16
DR53			
T-cell epitopes	FISLERLDVG	Measles virus fusion protein	17
		454-463	
	IEQVLEKRIKNSISTEWSPC	<i>P. falciparum</i> circumsporozoite	18
		331-350	

I hereby certify that this correspondence is being facsimile transmitted to the
U.S. Patent and Trademark Office on May 7, 2002.

FULBRIGHT & JAWORSKI LLP

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s) : Alexander, et al.
Serial No : 09/165,546
Filed : October 2, 1998
For : ISOLATED PEPTIDES CORRESPONDING TO AMINO
ACID SEQUENCES OF NY-ESO-1...
Art Unit : 1644
Examiner : A. Decloux

May 7, 2002

May 7, 2002

Hon. Commissioner of Patents
and Trademarks
Washington, D.C. 20231

SHOWING OF CHANGES

Claim 74: (Amended) An isolated polypeptide which binds to an MHC-Class II [HLA-DR53] molecule[s], said polypeptide comprising [which comprises] at least 18 and no more than 25 amino acids, said polypeptide further comprising [having at least one HLA-DR53 binding] a motif [, said motif] consisting of four amino acids, wherein the first amino acid is Tyr, Phe, Trp or Leu, and the fourth amino acid is Ala or Ser, wherein said polypeptide, when bound to said MHC-Class II molecule, stimulates recognition and proliferation of CD4⁺ cells which are specific for complexes of said polypeptide and [HLA-DR53] said MHC-Class II molecule.

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